

MiVida Reclamation Plan

M/037/028

Division of Oil, Gas and Mining

~~(April 16, 1992)~~

March 16, 1992

Introduction

The MiVida site is an old mining disturbance dating back to October of 1952. Uranium mining was initiated at the site by Charlie Steen's Utex Exploration Company and continued by Atlas Minerals, Bob Shumway, and more recently, Minerals West and Energy Fuels.

The MiVida mine permit consists of three main areas: 1) the Upper MiVida; 2) the McCormick Tunnel; and 3) the Expectation Tunnel. The Upper MiVida and McCormick Tunnel are located together in the same unnamed canyon above the Unocal gas facilities. The Expectation Tunnel is located in the next, parallel canyon to the north and is connected to the McCormick Tunnel underground. Fig. 1 displays the major features of the Upper MiVida and the McCormick tunnel, which together comprise the MiVida portion of the permit. ~~Fig. 2 displays the major features found at the Expectation tunnel.~~ The maps are not drawn to scale.

The Division of Oil, Gas and Mining together with Energy Fuels Nuclear, Inc., will be jointly implementing the reclamation of the MiVida site. Figure 1 displays areas of the Upper MiVida and McCormick sites which will be jointly reclaimed. Italicized, text indicates areas to be reclaimed by the Division. Standard, text indicates areas to be reclaimed by Energy Fuels. Areas which require no reclamation are shown in scripted text.

Upper MiVida

The Upper MiVida includes that portion of the MiVida site located to the extreme east and up the canyon from the McCormick Tunnel. The site includes all of the old, original MiVida workings and facilities as well as those added later by Atlas Minerals Corp. and Minerals West, Inc. On site are found the: office/washroom buildings; MiVida shaft; MiVida portal; Atlas ventilation shaft and hoist house; Minerals West decline; Minerals West waste dump; and a number of ruins left over from the original MiVida mine operation.

April 16, 1992

The portions of the site which require reclamation under the UMLRA of 1975 include: 1) the MiVida office building; 2) Atlas ventilation shaft and hoist house; 3) Minerals West waste dump; 4) Minerals West decline and 5) the access roads and pads. The county road running through the site will not require reclamation. Areas which are to be reclaimed are indicated on Fig. 1.

McCormick Tunnel

The McCormick tunnel portion of the MiVida plan consists of: 1) McCormick portal; 2) large 500 cubic yard ore bin; 3) McCormick waste dump; 4) ore cars, track and trestle; 5) two staging pads; 6) two access roads; 7) compressor shack; 8) extraneous debris; and 9) power lines, poles and transformers.

All portions of this site will require reclamation. The reclamation is to be shared between Energy Fuels and the Division. The Division will be responsible for the portions the site where historical values are to be preserved: 1) the entrance of the McCormick tunnel; 2) the ore cars and portions of the track; and 3) the ore bin. Energy Fuels will be responsible for : 1) repairing the south end of the damaged waste dump; 2) constructing a spillway across the south end of the waste dump (the spillway may be rip-rapped depending upon final design) ; 3) removing the power line and substation; 4) removing the compressor shack; 5) backfilling the McCormick Tunnel; 6) cleaning up and reclaiming the bone yard; 7) reclamation of the lower truck loading area and access road

Expectation Tunnel

The Expectation tunnel site consists of: 1) two large waste dumps; 2) Expectation portal; 3) three shacks/ruins; 4) substation, power line and poles; 5) bone yard; 6) areas of extraneous debris; 7) staging pad and 8) access roads. (See figure 2)

All portions of this site will require reclamation. Reclamation is to be performed by Energy Fuels.

Post-Mining Landuse

The area will be reclaimed for a dual post-mining landuse: 1. wildlife habitat and 2. maintenance of historical values. Portions of the Upper MiVida and McCormick will be preserved for they're historical significance, related to the Uranium Boom of the 50's and 60's.

Building Removal

All buildings or structures, on the three sites, will be demolished and buried onsite. These structures include: 1. the office building at the Upper MiVida; 2. the hoist house and head frame at the Upper MiVida; 3. the compressor shack at the McCormick; and 4. the three shacks at the Expectation tunnel site. Debris produced by the demolition of these structures can be place in the portals or buried onsite with at least 4 feet of topsoil or earthen material (overburden).

Regrading and Backfilling

All waste dumps are presently at the angle of repose and will be regraded to slopes no greater than 2:1. The preferred angle will be 3:1. However, where it becomes necessary to blend into the surrounding topography the slope angle can be greater. The Upper MiVida waste dump, McCormick dump and Expectation dump will be included in the reclamation. The Division will not require regrading of the east side of the McCormick dump. Energy Fuels will be responsible for regrading the southwest portion of the McCormick dump where it has been damaged by water erosion. The face of the west waste dump, at the Expectation site, will not be reworked to avoid exposure of boulders and encroachment of fines into the stream channel.

Where slopes are greater than 3:1, dozer dimpling or dozer basins will be applied to prevent excessive sheet erosion and erosion gulling.

Portal and Shaft Reclamation

All portals and shafts within the mine permit area will be sealed. At the Upper MiVida the Atlas ventilation shaft, Minerals West decline and MiVida decline will be backfilled with earthen material and graded to contour. The Atlas ventilation shaft will be backfilled to the ground surface, then blended into the surrounding terrain with fill material .

The original MiVida shaft has been buried by the Minerals West waste dump. The site should be identified and monumented.

The McCormick tunnel will be backfilled to within 20 feet of the rock surface entry. The entry way will be reinforced/rebuilt and left as a historical marker.

The Expectation tunnel and MiVida portal will be permanently sealed by backfilling or blasting.

Soil Material

Because the site was disturbed pre-law, no topsoil material was stockpiled. Existing, onsite earthen material will be used for backfilling, regrading and topsoiling. The dumps will be regraded, then fines from the surrounding pads or road grade will be used for distributing a 6 to 8 inch layer over the top of the waste material. Where no fines are available the dump material will be left exposed.

Revegetation

All reclaimed areas will be scarified , then seeded with following seed mixture:

Species	lbs/acre
1. Crested wheatgrass (Agropyron cristatum)	4
2. Western wheatgrass (Agropyron smithii)	4
3. Indian Ricegrass (Oryzopsis hymenoides)	3

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|----|---|---|
| 4. | Sand Dropseed
(Sporobolus crptandrus) | 2 |
| 6. | Yellow Sweetclover
(Melilotus officinalis) | 3 |
| 7. | Rabbitbrush
(Chrysothamus nauseosus) | 2 |
| 8. | Fourwing Saltbush
(Atriplex canescens) | 2 |

Total = 20 lbs/acre (broadcast rate)

Surface Water hydrology and Sediment Control

The areas to be reclaimed should be contoured and graded in a manner which prevents sheet erosion and gulling. Existing erosion gullies will be eliminated and water diversions (berms, waterbars) will be constructed to prevent water from concentrating along slopes or runs.

The drainage pattern in the Upper MiVida and McCormick has developed into a system whereby large events will force water into a channel which flows into the Upper MiVida portal, through the mine workings, then out the McCormick tunnel portal. This must be eliminated by backfilling the Upper MiVida portal and grading the area such that the water flows back into the original channel.

The dike formed by the McCormick waste dump will be left in place. A spillway should be constructed along the south edge of the dump. The spillway will be constructed such that it will not undercut the county road.

Waste material dumped into the drainage, associated with the elongated, southern extent of the Expectation waste dump, will be pulled back, as much as practicable, out of the drainage and blended into the hillside to the north. Debris will be removed from the drainage placed in the portal or removed offsite to a landfill.

Hazardous Materials

Any hazardous material found in drums (oil or gas) on the site will be taken to a licensed landfill. Transformers remaining on the site will be evaluated for PCBs and disposed of accordingly if found to be PCB containing. Old batteries found within the permit area will be disposed of by removal to a licensed landfill.

Phase II Reclamation

The Division will be responsible for the reclamation of the following areas at the Upper MiVida and the McCormick:

1. The large ore bin at the McCormick will be welded shut, at the bottom, to prevent the exit of fill material. It will then be filled to the top with fill. The trestles and ore cars will be removed from both sides of the bin. A metal chain link fence and/or steel rails will then be erected around the perimeter of the bin to prevent injury to the public.
2. The ore cars will remain in their present position on the portion of the track left after the trestles have been removed. An alternative plan would be to move the cars to the mouth of the McCormick Portal and place them on rails extending from the portal.
3. The McCormick portal entryway will be reinforced to prevent injury to the public. A concrete or wooden bulkhead will be placed against the backfilled material 20 feet back from the entrance.

The Division will attempt to maintain the historical integrity of these areas during reclamation.

page 7
MiVida Mine Reclamation Plan
April 16, 1992

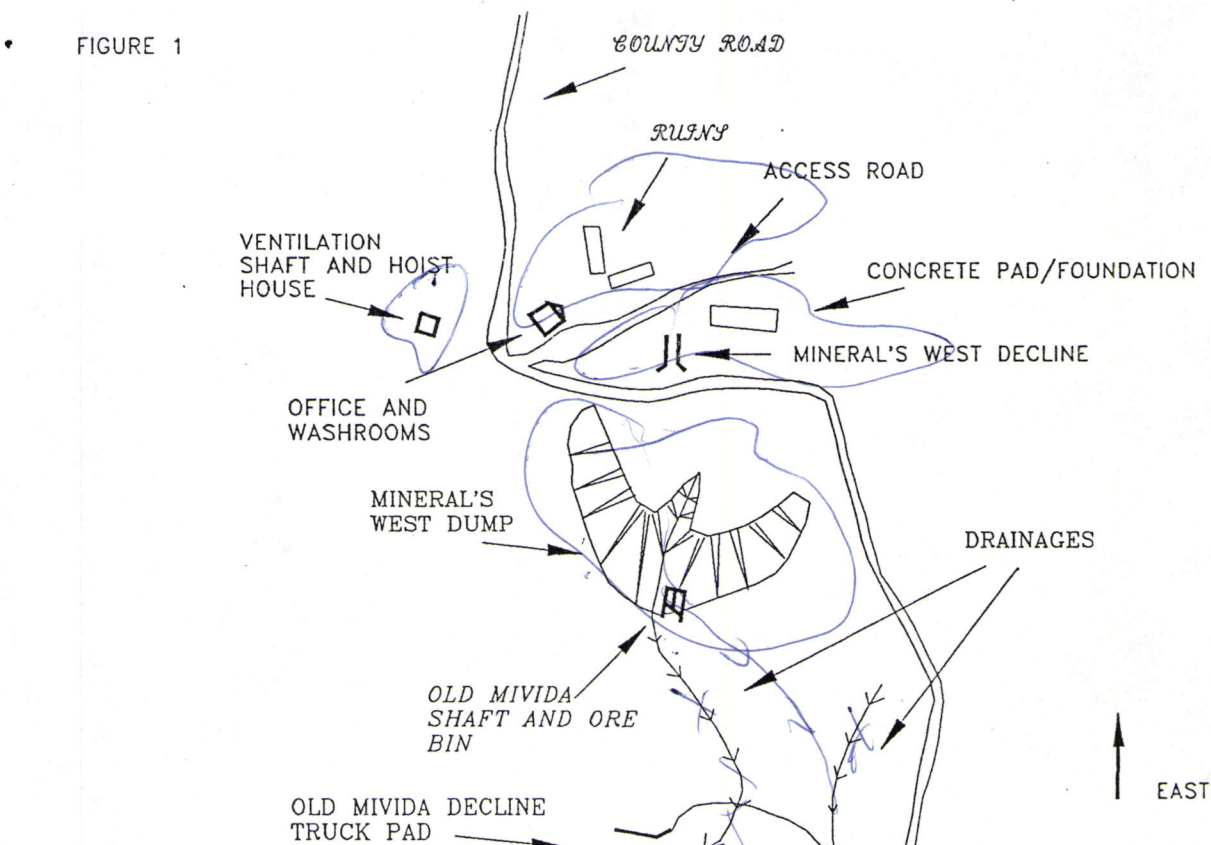
Identification of Historical Values

Providing funds are available, the Division will facilitate the following:

1. The original site of the 1952 Charlie Steen shaft will be identified and a plaque will be placed at its location stating the significance of the site.
2. To identify the historical significance of McCormick Tunnel, a plaque will be placed at the entrance to the portal.

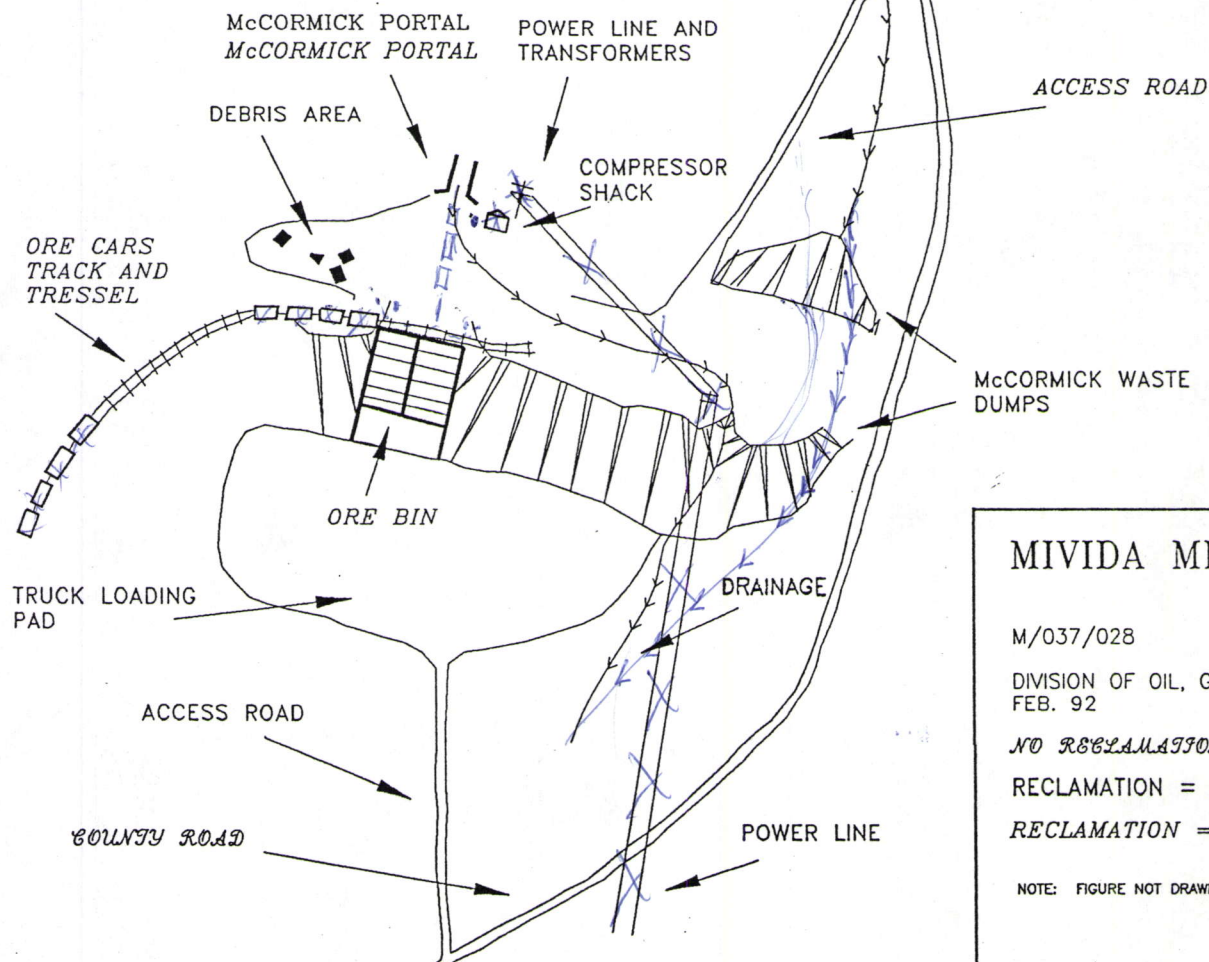
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FIGURE 1



UPPER MIVIDA

McCORMICK TUNNEL



MIVIDA MINE SITE

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NO RECLAMATION

RECLAMATION = ENERGY FUELS

RECLAMATION = DOGM

NOTE: FIGURE NOT DRAWN TO SCALE